Assetly

Software Design Document (SDD)

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1. Introduction

This document outlines the design for **Assetly**, a software application aimed at simplifying asset management for small and large businesses alike.
The system is intended for asset managers and asset users (i.e. staff members), providing them with an efficient tool to track asset availability and usage in real time to all who are involved.

2. System Overview

The application is composed of several interconnected modules, each responsible for a specific set of functionalities.
At a high level, the system includes:

- **Employee Management Module** — Manages the employees/users of the system, authentication for access, adding new employees to the system, and storing relevant information about each user.
- **Asset Management Module** — Handles adding/removing assets, availability of each asset, and assigning assets to their respective users.
- **History Tracking Module** — Responsible for tracking history of asset usage, assignment, addition, deletion, and maintenance.

Each module interacts smoothly to ensure a seamless experience for the end user.

3. Detailed Module Descriptions

3.1 Employee Management Module

Purpose:
Handles user account creation, login/logout, authentication, and information.

Key Data:

- Usernames
- Emails
- Passwords
- User roles

Notes:
Essential for protecting user access and assigning managerial powers.

3.2 Asset Management Module

Purpose:
Handles the creation, updating, and deletion of assets within the system. Assets can have a name, a type, and a status for availability.

Key Data:

- Asset serial number
- Asset name
- Asset type
- Asset status

Notes:
This module is the heart of the system.

3.3 History tracking module

Purpose:
Tracks all the interactions within the system for logging and provides ease of access to the history of the server's runtime.

Key Data:

- Server runtime log file
- Database log file

Notes:
Contains multiple logging systems to avoid a single point of failure.

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4. Component Interaction

The system is designed with modular interaction in mind. Here's how the parts connect:

- Any API request coming from a client (the front-end), is processed by the respective controller in the **Controllers Package**.
- The controller then delegates the processing / logic to the respective service in the **Services Package**.

- The service makes sure all the data is in order and valid, then fetches the relevant data or requests some data to change through the respective repository in the **Repositories Package**.
- The repository uses the respective model for the data to query the database through Java's JDBC and with that the full transaction comes to an end and the client gets notified immediately.

This whole transaction takes a split second to complete.

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5. User Interface (UI) Description

The system's interface is designed to be minimal and intuitive to use, consisting of the following pages:

- **Login Page:**
  - Email field
  - Password field
- **Dashboard/Main Page:**
  - Navigation bar
  - Sign out button
  - Assets section
  - Search bar
- **Add Staff Page (Asset Manager):**
  - Form to add a new staff member to the system
- **Add Asset Page (Asset Manager):**
  - Form to add a new asset to the system
- **My Assets Page (Staff):**
  - List of assets being used by the logged in user

Each page is designed with responsiveness in mind to ensure compatibility across desktop, tablet, and mobile devices. *(320px wide screens and higher)*

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6. Special Requirements

- **Performance:**
  The system should maintain quick response times under typical usage loads.
- **Compatibility:**
  The platform should be fully functional on both desktop and mobile browsers.
- **Scalability:**
  The system should be designed in a way that allows easy scaling.
- **Accessibility:**
  Interfaces should be easily usable and take almost no time to navigate properly.

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